

AI-POWERED PROCUREMENT: HARNESSING AI'S POTENTIAL FOR MORE EFFICIENT STATE PROCUREMENT PRACTICES



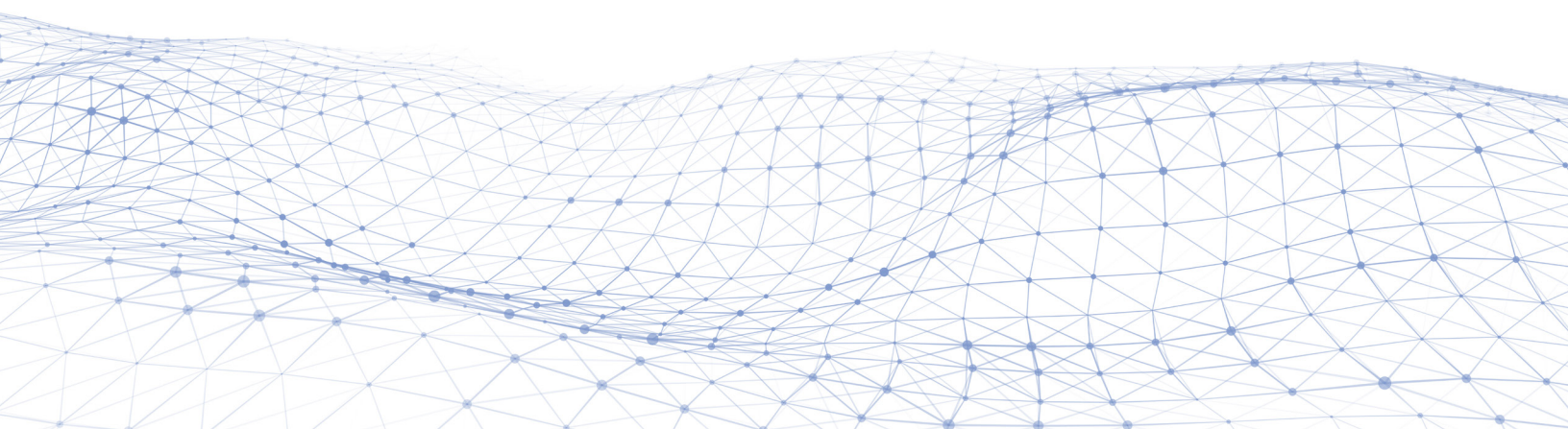
This is a joint project between NASCIO, NASPO, and our academic partners Ana-Maria Dimand at Florida State University and Andrea Patrucco at Florida International University.

Public procurement is a critical function in state governments, responsible for acquiring the goods, services and technologies needed to support public service delivery. However, the procurement process can be slow and inefficient, particularly when it comes to acquiring advanced technologies. These delays can lead to scenarios where technology becomes outdated before it is fully implemented, undermining the effectiveness of public sector operations. This inefficiency not only impacts the timely delivery of services but also creates challenges in meeting the evolving needs of citizens.

In addition to procedural inefficiencies, state governments are facing significant workforce **challenges**. With limited resources and a shrinking pool of skilled workers, public sector organizations struggle to meet the demands placed upon them. Artificial intelligence (AI) offers a promising solution to these challenges by automating routine tasks, reducing manual workloads and enabling public sector employees to focus on more strategic and **value-added activities**. AI's ability to streamline operations, enhance decision-making and improve service delivery makes it a critical tool for **addressing the workforce gaps in state governments**.

Recent research conducted by the **National Association of State Chief Information Officers (NASCIO)** has particularly highlighted the growing interest in AI as a means to modernize state government operations. These studies emphasize the potential of AI to increase efficiency, reduce costs and improve the overall effectiveness of procurement activities. By leveraging AI technologies, public procurement can **overcome many of the challenges associated with traditional procurement processes**, ensuring that state governments can effectively meet their operational goals.

While AI holds **significant potential**, its adoption in public procurement is not without **challenges**. Public sector agencies, particularly at the state level, have shown caution in deploying AI systems due to concerns related to data privacy, data quality, bias, accountability and the ethical implications of AI use. Moreover, the involvement of private vendors/suppliers in AI deployments raises additional concerns about transparency and accountability. To navigate these challenges, it is essential for public sector entities to develop **AI-specific procurement guidelines** and processes that align with fundamental rights and ensure due process. Such guidelines will help mitigate risks and ensure that AI technologies are implemented in a manner that upholds public sector values.



To explore how public organizations can overcome the challenges associated with AI adoption and enhance procurement and other public sector operations through AI, NASPO and NASCIO, along with academic partners, joined together to see how AI might help the state procurement process. We conducted interviews with key stakeholders, including chief procurement officers (CPOs), chief information officers (CIOs), AI technology vendors/suppliers and platform intermediary providers. These interviews, facilitated by our academic partners, focused on understanding the strategic and operational implications of AI in public procurement. Additionally, we analyzed state-level AI policy documents and relevant reports to provide a comprehensive view of AI adoption and integration within the public sector. This review of data allowed us to identify the key themes, challenges and opportunities related to AI in public procurement, which are outlined in the following sections.

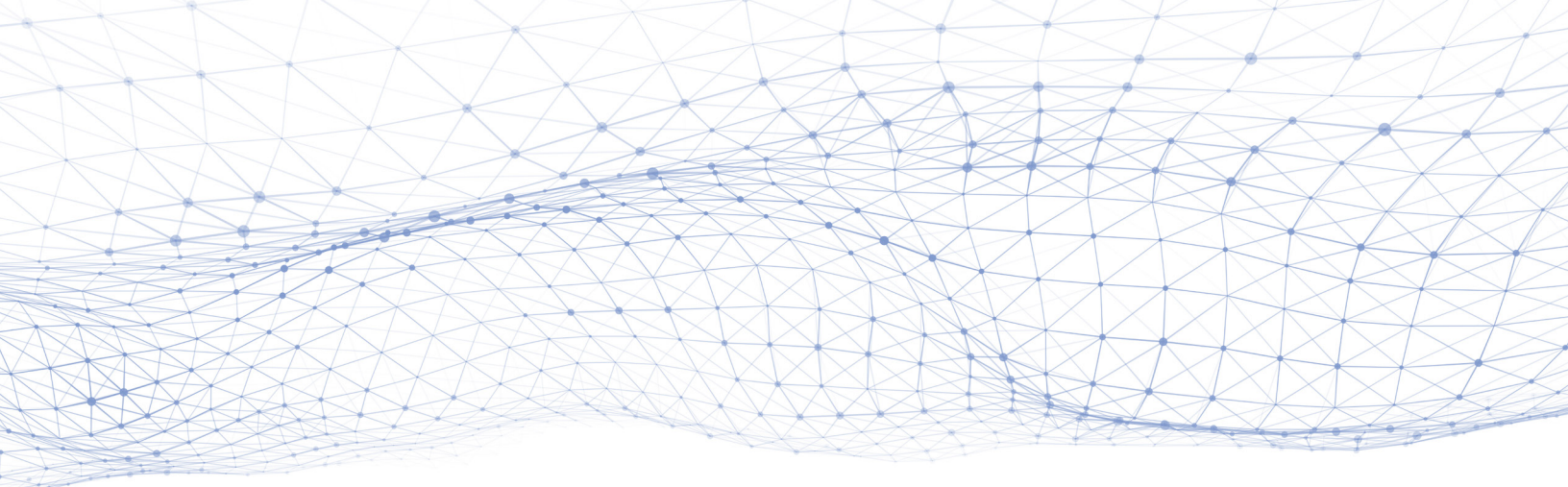


UNLOCKING AI POTENTIAL

Evidence emerging from our data shows that AI has the potential to be a powerful tool in public procurement, offering a range of applications that can enhance both operational efficiency and strategic decision-making.

Some of the most impactful uses of AI in procurement include:

- **Automated Document Processing:** AI systems can automate the processing of procurement documents, such as requests for information (RFIs), requests for proposals (RFPs) and contracts. This increases efficiency by speeding up document handling and reducing errors associated with manual processing.



- **Chatbots for Vendor/Supplier Q&A:** AI-powered chatbots assist vendors/suppliers by handling routine inquiries regarding procurement processes, reducing the workload on procurement staff and providing instant responses that enhance vendor/supplier experience.
- **Predictive Analytics for Spend Forecasting:** AI tools can analyze historical spending data to forecast future procurement needs and budgets, supporting strategic decision making and helping to optimize budget allocations.
- **Vendor/Supplier Matching:** Machine learning algorithms can match vendors/suppliers to business opportunities based on past interactions and purchase orders, improving the accuracy and relevance of vendor/supplier recommendations and enhancing vendor/supplier engagement.
- **Contract Standards and Management:** AI applications can assist in creating and managing procurement contracts, streamlining the process, ensuring compliance with regulatory standards, and reducing the time and effort required for contract management.
- **Fraud Detection:** AI systems designed to detect anomalies and potential fraud in procurement transactions enhance the security and integrity of procurement processes, reducing financial losses due to fraudulent activities.
- **RFP Automation:** AI applications that automate the creation, distribution and evaluation of RFPs can significantly reduce the time required for RFP processes while ensuring more consistent and thorough evaluations.
- **Spend Analytics:** AI tools that analyze spending patterns identify cost-saving opportunities and improve transparency and accountability in spending.
- **AI-Powered Market Research:** AI tools that gather and analyze market data to inform procurement decisions provide up-to-date market insights and support strategic sourcing and vendor/supplier negotiations.

These applications are particularly valued for their ability to automate repetitive tasks, thereby allowing procurement professionals to focus on higher-value activities and strategic initiatives. As AI continues to evolve, its role in public procurement is expected to expand, offering even greater potential for improving efficiency and effectiveness.

UNDERSTANDING THE OBSTACLES IN AI DEPLOYMENT

Despite the potential benefits of AI, not all implementations have been successful. Lessons from failed projects underscore the importance of careful planning, clear policy frameworks and strong collaboration between procurement and the state CIO office.

Common pitfalls in failed AI projects include:

- **Inadequate Planning:** Lack of a clear understanding of the specific needs and challenges of the procurement process often leads to the selection of inappropriate AI solutions.
- **Insufficient Policy Guidance:** The absence of robust AI policies can result in projects that are not aligned with organizational goals or regulatory requirements.
- **Poor Collaboration:** Failure to establish effective communication and collaboration between procurement, the CIO's office and other stakeholders can lead to siloed efforts and suboptimal outcomes.

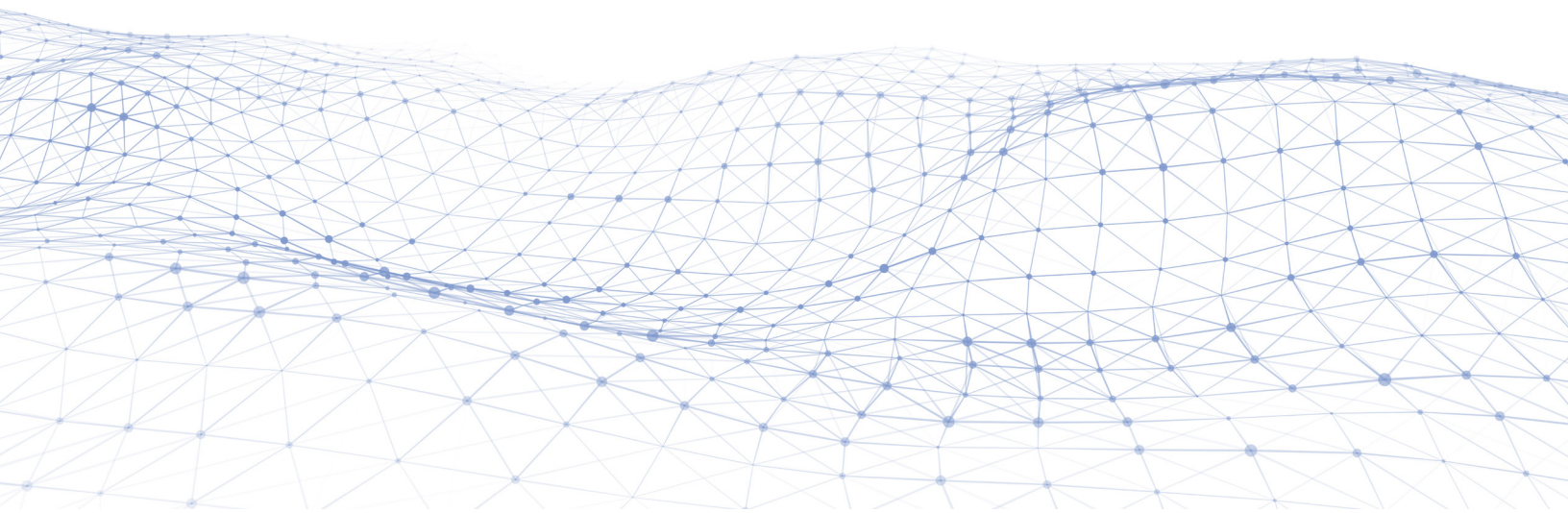
These failures highlight the necessity of a well-structured approach to AI adoption, one that involves all relevant stakeholders and is guided by comprehensive policies and frameworks.



The integration of AI in public procurement demands careful attention to issues of privacy, security and bias. To address potential pitfalls, the following should be prioritized to ensure the successful integration of AI into public procurement:

- **Data Protection:** Ensuring the security and confidentiality of sensitive data is a major concern in AI adoption. Public sector organizations should navigate privacy laws and stringent data protection standards to safeguard against breaches and unauthorized access. Robust data governance frameworks are essential.
- **Ethical Concerns and Bias:** AI systems can inadvertently perpetuate biases present in their training data, leading to unfair or discriminatory outcomes. AI algorithms should be carefully designed and monitored to prevent bias. Addressing these ethical concerns requires continuous oversight and the implementation of bias mitigation strategies. Ensuring fairness in AI-driven decisions is critical to maintaining equity in public procurement.
- **Accountability and Transparency:** AI systems should be transparent in their operations, allowing stakeholders to understand how decisions are made and ensuring accountability for those decisions.
- **Technological Maturity:** The maturity and reliability of AI tools are crucial for their successful deployment. Many AI solutions are still in development, and ensuring they are suitable for public procurement requires thorough evaluation and testing.
- **Navigating the Complexities of AI Procurement:** Procuring AI solutions often involves navigating complex regulatory frameworks and ensuring compliance with existing policies. This can be a significant hurdle, particularly for organizations that lack experience with AI technologies.

These challenges reflect the complexities involved in integrating AI into procurement processes. Overcoming these obstacles requires a concerted effort to develop robust policies, ensure data protection, address ethical concerns and manage changes in work structure.





BEST PRACTICES IN AI ADOPTION FOR PUBLIC PROCUREMENT

Successful AI initiatives in public procurement demonstrate the importance of robust collaboration between procurement and CIO offices, underpinned by comprehensive AI policies. These projects have shown that when procurement and IT work closely together, they can develop AI solutions that are not only effective but also aligned with broader public sector values and goals.

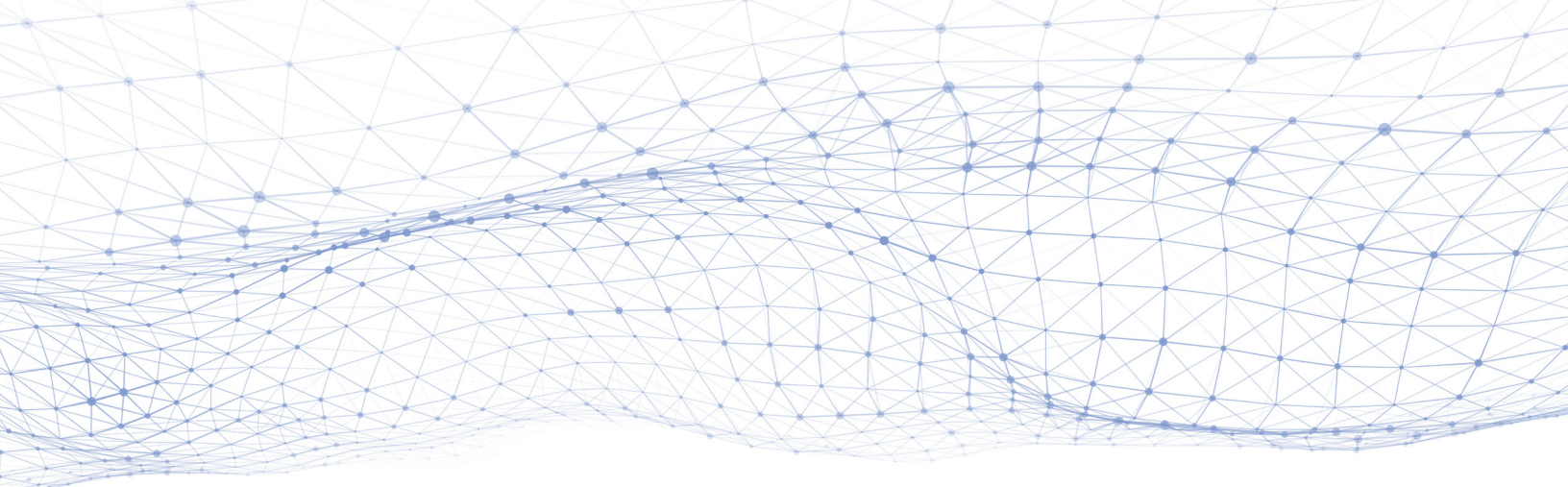
For AI adoption in public procurement to be successful, we identify seven key factors that should be in place:

1. Develop Comprehensive AI Policies

The foundation of successful AI integration in public procurement begins with the establishment of clear and comprehensive AI policies. These policies should address critical principles such as transparency, accountability, data privacy, security and ethical use. By setting these guidelines, procurement offices can ensure that AI technologies are deployed responsibly, aligning with public sector values and regulatory requirements. Effective AI policies not only guide the ethical use of AI but also provide a framework for mitigating risks and enhancing public trust in AI-driven processes.

2. Start with Targeted Use Cases

Rather than pursuing widespread AI adoption all at once, state procurement offices should focus on specific, targeted use cases where AI can deliver immediate and tangible benefits. Examples include automating document processing or improving vendor/supplier matching. Starting with manageable, well-defined projects allows organizations to assess AI's impact in a controlled environment, reducing the risk of complications that can arise from large-scale deployments. This phased approach also provides valuable insights that can inform broader AI strategies in the future.



3. Foster Collaboration Between Procurement and IT

Strong collaboration between procurement and IT departments is essential for the successful deployment of AI technologies. These departments should work closely together to develop AI solutions that are tailored to organizational needs, ensuring they are interoperable, secure and effective. This partnership is crucial for navigating the complexities of AI integration, from selecting the right technologies to ensuring compliance with statewide enterprise policies. A coordinated effort between procurement and IT helps to align AI initiatives with the broader goals of public sector innovation and efficiency.

4. Engage Vendors/Suppliers Effectively

Vendors/suppliers play a critical role in the AI adoption process, offering expertise and tailored solutions that meet the specific needs of public procurement. State procurement offices should work closely with AI vendors/suppliers to ensure that solutions adhere to required standards for transparency, data protection and bias mitigation. Moreover, vendors/suppliers should provide ongoing support and training to help procurement staff effectively adapt to AI technologies. This collaborative relationship is key to ensuring that AI implementations are successful and sustainable over the long term.

5. Prioritize Training and Change Management

The transition to AI-driven processes requires careful management to address potential resistance and ensure that procurement staff are equipped to work with new technologies. Prioritizing training and change management are crucial to a smooth adoption process. By educating employees about AI and providing the necessary support during the transition, procurement offices can mitigate concerns, foster a culture of innovation and ensure that AI tools are used effectively to achieve organizational goals.

6. Focus on Ethical and Responsible Use

Ensuring that AI is used ethically and responsibly is a top priority. CIOs are key in aligning AI use with ethical standards, such as those outlined by the National Institute of Standards and Technology (NIST). Procurement should support this by selecting vendors/suppliers committed to ethical AI practices and by including ethical guidelines in AI contracts.

7. Establish Performance Monitoring, Continuous Improvement and Training

Regular monitoring and evaluation of AI systems are necessary to ensure they perform as intended and comply with established policies. This includes setting performance metrics, conducting regular audits and updating AI systems based on feedback and evolving needs. Regular communication between procurement and IT teams, as well as training programs to equip staff with the necessary skills to manage and utilize AI effectively is also crucial.

A STRATEGIC PATHWAY TO AI INTEGRATION

The successful adoption of AI in public procurement requires a strategic, well-thought-out approach that begins with policy development and extends through collaborative efforts, targeted implementation and continuous evaluation. By following these best practices and leveraging the collective expertise of procurement and IT, state governments can unlock the full potential of AI to enhance procurement processes, improve public service delivery and create greater value for citizens. In this area, research serves as a vital bridge between academic insights and practical applications in state procurement. By conducting case studies, evaluating AI implementations and exploring the impact of policies on AI adoption, researchers can offer valuable guidance to procurement offices. This collaboration between academics and practitioners helps to refine AI strategies, address challenges and optimize the use of AI in public procurement. Engaging with academic research allows state governments to stay informed about the latest developments in AI, ensuring that the most current and robust evidence informs their practices.



ADDITIONAL READINGS AND RESOURCES

Ahmadi M and Bullock J. (2023). [Government Procurement and Acquisition: Opportunities and Challenges Presented by Artificial Intelligence and Machine Learning. IBM Center for The Business of Government.](#)

Desouza K. (2021). [Artificial Intelligence in the Public Sector: A Maturity Model. IBM Center for The Business of Government.](#)

NASCIO & NASPO (2021). [Buyer Be Aware: Integrating Cybersecurity into the Acquisition Process.](#)

NASCIO (2023). [Your AI Blueprint: 12 Key Considerations as States Develop Their Artificial Intelligence Roadmaps.](#)

NASPO (2023). [Cronin Awards 2023: Michigan's Taking IT to the Next Level.](#)

NASPO & Metzger, R. (2024). [Artificial Intelligence & Legal Implications for Public Procurement Webinar.](#)

Smyth, M. & Ward, M. (2017). [State IT Procurement Negotiations: Working Together to Reform and Transform.](#)



Developed By:

Founded in 1969, the **National Association of State Chief Information Officers (NASCIO)** represents state chief information officers and information technology (IT) executives and managers from the states, territories, and District of Columbia. NASCIO's mission is to foster government excellence through quality business practices, information management, and technology policy. NASCIO provides state CIOs and state members with products and services designed to support the challenging role of the state CIO, stimulate the exchange of information, and promote the adoption of IT best practices and innovations. From national conferences to peer networking, research, publications, briefings, and government affairs, NASCIO is the premier network and resource for state CIOs. To learn more about NASCIO, please visit www.nascio.org or contact aglasscock@NASCIO.org.



The **National Association of State Procurement Officials (NASPO)**, Inc. was formally established on January 29, 1947, in Chicago, Illinois. NASPO is a non-profit association dedicated to advancing public procurement through leadership, excellence, and integrity. It is made up of the directors of the central purchasing offices in each of the 50 states, the District of Columbia, and the territories of the United States. NASPO is an organization that helps its members achieve success as public procurement leaders through the promotion of best practices, education, professional development, research, and innovative procurement strategies. For more information visit www.naspo.org or contact research@naspo.org.

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